Labor Migration in the Digital Economy

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Author Biography

Jason T. Jacques is a Research Associate at the University of Cambridge. His PhD thesis, entitled *Microtask Design: Value, Engagement, Context, and Complexity* [3], focused on four important design considerations for task designers that impact and influence the worker. His work has offered insights into what makes tasks attractive to crowdworkers [4], increasing worker mobility and use of mobile devices [5], and the economic landscape in which crowdwork is carried out [6]. His current work takes an increasingly policy-based look at the impact of digital technologies on individuals, organizations, and the wider world.

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Abstract

Before the rise information age, long predating industrialization, and since the earliest developments of agriculture, the ebb and flow of labor has been crucial to support the development of our civilization. In the modern era, as Western economies have become increasingly dependant on the service sector, workers have had to adapt to increasingly automated scheduling and digital-mediation of their labor. The development of outsourcing into crowdsourcing, where workers toil from their home computers, has had a profound effect on how, in particular, low income individuals engage with the labor market. Work has become transient and piecemeal. The emergence of the gig-economy has moved the needle further, with physical labor now instantly available at the whim of a algorithmic smartphone app. As the fluidity of labor continues to increase, this thought piece highlights the importance of understanding and supporting labor migration in the digital economy.

Author Keywords

gig economy; labor migration; crowdsourcing

CCS Concepts

•Information systems → Crowdsourcing; •Social and professional topics → Economic impact;

Introduction

The ability for individuals to dedicate themselves to a particular task, underpinned by trade, heralded the emergence of the modern economy. As humans shed the yoke and toil of subsistence living, able to dedicate their focus to improving and optimizing the value of their labor, civilizations rose from the tribes of yore. The significance of vast numbers of highly mobile human workers is demonstrated by the rise the United States as a super-power in the new world, the economic powerhouse that is China, and the supranational organization of the EU. The expansionist motivations of humans across the plains of the West, centralization from rural regions into rapidly industrialized mega-metropolises in the East, and fluidly movement between the nations of the old world has been crucial to the development and maintenance of the highly-integrated global economy of today.

As the West, and the world, develops an increasingly service-focused data-driven economy, the mobility of an increasingly digitally-mediated workforce demands our attention. Crowdsourcing platforms, such as Amazon Mechanical Turk, have made tens of thousands of highly skilled individuals instantly available to whims of the bourgeois of the information economy. The nature of this on-demand workforce has begun to take serious strides out from behind the screens of the offices, studies, annexes, and bedrooms of the traditional crowdworker and into the real world [5]. The rise of smartphones has led not only to an increasing availability of this already highly-available workforce, but also opened new opportunities for physical piecemeal labor, in the form of personal services, transportation, and delivery.

These developments have created new types of work and a new class of instantly available, digitally-mediated workers in the so-called *gig economy*.

Economic Motivations

While the motivations of crowdworkers has been the subject of scholarly debate [6, 7], the realities of performing physical labor in the real-world make the economic motivators more stark. While not inconceivable, the high capital and operating expenses of maintaining, for example, a suitable vehicle for Uber, makes the idea of purely intrinsic motivations highly suspect. While traditional employees benefit from the payment of incidental expenses (such as stationary), overheads (such as equipment and energy), and training and preparation time, workers in this new economy must factor these additional costs into their effective hourly rate [6]. Quite simply, workers are only paid for work produced irrespective of the expense of the undertaking.

In “traditional” crowdsourcing activities, workers have long aimed to optimize their activities to minimize their non-billable time. Simple changes to the interface of the platform, such as the popular *PandA* (*P*review *and A*ccept) links for Amazon Mechanical Turk allowed workers to reduced start-up time for tasks they were likely to pursue to completion [4]. These optimizations often go much further including plugins and scripts that automate mundane tasks [7], such as filling out basic demographics and automatically handle the completion codes and `WorkerID` collection typical of the platform.

On-demand Economy

The increasing on-demand nature of work, not just in the digital sphere but also in the real world, where the contracted hours of the individual are reduced to zero and the the scheduling of labor is done algorithmically in response to real and predicted custom has changed the nature of employment. Workers must now be ready to accept tasks with just hours or even minutes of notice, or risk their algorithmic overlords looking less favourably on them in future.

Migration of Labor

The ability to fluidly move from one platform to another, on this globally connected world wide web, may offer some respite to the individuals tied into the modern digitally-mediated economy. Mobile accessible tasks on a crowdsourcing platform, taking just a few minutes each, may be practically slotted between more substantial real-world labor such as driving or food delivery. By populating these small moments of down-time with paid work, or even exploiting any inefficiencies in the system such as waiting for an take-out order to be readied, the emergent digital workforce may reclaim some of the lost income sacrificed to this new model of work.

Previous research has shown that even for desktop-focused crowdsourcing platforms, the mobile workforce is on the rise [5]. This presents new opportunities for both those developing and positing the tasks for this increasingly mobile workforce. Physical movement is now in the purview of this workforce and the hybridization of the information and physical economy becomes practical. Market research, for example such as that carried out by Google surveys, could move from an opportunistic activity (e.g. “Did you purchase any confections at this location?”) to directed activities (e.g. “Which soft drinks are available in the diner 0.2 miles to your east?”). The requirement for employers to facilitate the feasibility of these tasks on mobile devices would increase the availability in the market place, and potentially driving wider adoption of the paradigm.

There are early indications that this movement of crowdworkers to a hybrid employment approach may already be in progress [6]. Builidng upon these findings, tentative work is currently being undertaken to better understand the links an migration of labor between a wide variety of real-world, digitally-mediated platforms and crowdworkers.

Supporting Movement

Traditional, full-time employment opportunities have the mobility of the workforce baked in. While employers may bemoan the loss of a productive employee, they benefit greatly from detailed metrics such as education, and experience embedded in the candidates resume. For more skilled or specialized labor, the system supports additional qualitative input in the form of interviews and references.

The large scale of crowdsourcing platforms, with hundreds of thousands of supposedly interchangeable workers, offers a limited number of metrics which allow some approximation of worker “quality” (such as *Masters* on Amazon Mechanical Turk) or simple subdivision and stratification of the workforce (e.g. demographic selectors on Prolific). While workers actively curate their performance metrics [7], such as careful engagement with large batches of small tasks from unknown employers on Amazon Mechanical Turk, these qualifications are non-transferable.

With the support of academics workers have developed employer ranking and review systems such as Turkopticon [2]. However, like the platforms which they support, it is non-trivial to translate this dataset to alternative platforms or link superficially distinct accounts into a uniform identifier. Despite data migration, and the ability to move between platforms, being a core precept of data protection legislation in the EU, formalized in the *GDPR* (General Data Protection Regulation) [1], the practical implications of this have not been realized. To support a truly mobile workforce, workers must be able to replicate the ready transfer of traditional qualifications with their electronic counterparts in this emerging world of digitally-mediated piecemeal labor.

Supporting Privacy

Crowdsourcing platforms, such as Amazon Mechanical Turk, have an implicit, if not truly unambiguous, expecta-

tion of privacy and anonymity for the worker [7]. While the aforementioned GDPR affords export and migration of personal data, these regulations also bestow the power on the individual to correct and cleanse their data [1]. Within the GDPR framework, digital-mediation itself is subject provisions against unexplainable "computer says no" exclusion of the individual [1]. While the digital workforce, and their employers, might benefit from a mobilization of this labor across platforms the increasing delicacy, and not insignificant legal liability, of allowing unfettered access to potentially highly sensitive data may create situations in explicit contravention to both existing and emerging legislation.

Conclusion

The significance of labour migration to the development of the modern globally-integrated economic system cannot be overstated. The rise of truly always-on, mobile computing is changing the landscape of even the most well-studied crowdworking platforms. With the expansion of app-based roles in the gig-economy we are begining to see the hybridization of both instantaneously intellectually and physically mobile workers. As we increasingly depend on a digitally-mediated economy, it will become progressively more important to understand, and shape, the practical implementation of these platforms, their integration and segregation, and both the technological and legal frameworks that support this potentially attention-divided workforce.

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